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| Q.4 | (a) Briefly discuss the polarity test of a single phase transformer. | 03 |
| | (b) Briefly describe the voltage build up process of a self excited DC shunt generator. | 04 |
| | (c) Draw the vector diagrams and winding connections for the following: | 07 |
| | 1. Dy11 2. Yz1 | |
| Q.5 | (a) Briefly explain the concept of electrical degree and mechanical degree in case of rotating machines. | 03 |
| | (b) Draw the circuit and explain Sumpner's test on single phase transformers. | 04 |
| | (c) Draw the schematic diagram and explain the solid state speed control (Speed control using power electronic switches) of DC motors. | 07 |
| | OR | |
| Q.5 | (a) Explain the power flow diagram of a DC machine. | 03 |
| | (b) Draw and explain the internal characteristic of a DC shunt generator. | 04 |
| | (c) Briefly explain the ON load and OFF load tap changing transformers. | 07 |
